

Abstract

Let's assume a Mobile Station (MS) with the home location in New York connects to the wireless network in La Jolla, California, to a Packet Data Service Node/Foreign Agent (PDSN/FA) in San Diego. The MS has an IP address that points to the home network in New York. To authenticate the user, the PDSN/FA connects to the Home Agent in New York. After authentication/authorization, the user will ask for services by sending IP packets to the PDSN/FA. The user requests restaurant recommendations within 2 miles from his/her current position. The PDSN/FA forwards the user's IP packets to the service provider server that in our example is Los Angeles.

The network determines the user's current location and provides him/her with a list of restaurants. The server sends the packets to the source address learned from the user's packets. This address points to the home network in New York and the packets will be forwarded to the Home Agent in New York. The Home Agent determines that the packets are intended to the MS, and sends them in a tunnel (previously established between the PDSN/FA and HA) to the PDSN/FA. The PDSN/FA terminates the tunnel and sends the packets to the MS over the radio network. Thus, these packets instead of being sent from Los Angeles to San Diego and to La Jolla/MS, are sent from Los Angeles to New York and back to San Diego. With this invention, the unnecessary trip from Los Angeles to New York and back to San Diego is avoided and the round-trip delay is reduced.